

1600

RAW SEQUENCE LISTING DATE: 02/16/2001
PATENT APPLICATION: US/09/603,124A TIME: 08:35:27

Input Set : N:\jumbos\seqlistcorrected.txt
Output Set: N:\CRF3\02162001\I603124A.raw

Does Not Comply
Corrected Diskette Needed

mas
throughout

3 <110> APPLICANT: Pompejus, Markus
4 Kroger, Burkhard
5 Schroder, Hartwig
6 Zelder, Oskar
7 Haberhauer, Gregor
9 <120> TITLE OF INVENTION: CORYNEBACTERIUM GLUTAMICUM GENES ENCODING PROTEINS
10 INVOLVED IN HOMEOSTASIS AND ADAPTATION
12 <130> FILE REFERENCE: BGI-132CP
14 <140> CURRENT APPLICATION NUMBER: 09/603124A
15 <141> CURRENT FILING DATE: 2000-06-23
17 <150> PRIOR APPLICATION NUMBER: US 60/141031
18 <151> PRIOR FILING DATE: 1999-06-25
20 <150> PRIOR APPLICATION NUMBER: US 60/143694
21 <151> PRIOR FILING DATE: 1999-07-14
23 <150> PRIOR APPLICATION NUMBER: US 60/151778
24 <151> PRIOR FILING DATE: 1999-08-31
26 <150> PRIOR APPLICATION NUMBER: DE 19931418.7
27 <151> PRIOR FILING DATE: 1999-07-08
29 <150> PRIOR APPLICATION NUMBER: DE 19932124.8
30 <151> PRIOR FILING DATE: 1999-07-09
32 <150> PRIOR APPLICATION NUMBER: DE 19932126.4
33 <151> PRIOR FILING DATE: 1999-07-09
35 <150> PRIOR APPLICATION NUMBER: DE 19932127.2
36 <151> PRIOR FILING DATE: 1999-07-09
38 <150> PRIOR APPLICATION NUMBER: DE 19932133.7
39 <151> PRIOR FILING DATE: 1999-07-09
41 <150> PRIOR APPLICATION NUMBER: DE 19932207.4
42 <151> PRIOR FILING DATE: 1999-07-09
44 <150> PRIOR APPLICATION NUMBER: DE 19932208.2
45 <151> PRIOR FILING DATE: 1999-07-09
47 <150> PRIOR APPLICATION NUMBER: DE 19932225.2
48 <151> PRIOR FILING DATE: 1999-07-09
50 <150> PRIOR APPLICATION NUMBER: DE 19932229.5
51 <151> PRIOR FILING DATE: 1999-07-09
53 <150> PRIOR APPLICATION NUMBER: DE 19932914.1
54 <151> PRIOR FILING DATE: 1999-07-14
56 <150> PRIOR APPLICATION NUMBER: DE 19933006.9
57 <151> PRIOR FILING DATE: 1999-07-14
59 <150> PRIOR APPLICATION NUMBER: DE 19940765.7
60 <151> PRIOR FILING DATE: 1999-08-27
62 <150> PRIOR APPLICATION NUMBER: DE 19940768.1
63 <151> PRIOR FILING DATE: 1999-08-27
65 <150> PRIOR APPLICATION NUMBER: DE 19940831.9
66 <151> PRIOR FILING DATE: 1999-08-27
68 <150> PRIOR APPLICATION NUMBER: DE 19940832.7
69 <151> PRIOR FILING DATE: 1999-08-27
71 <150> PRIOR APPLICATION NUMBER: DE 19941385.1

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W--> 72 <151> PRIOR FILING DATE: 1999-08-31
74 <150> PRIOR APPLICATION NO: DE 19941385.1
75 <151> PRIOR FILING DATE: 1999-08-31
77 <150> PRIOR APPLICATION NUMBER: DE 19941396.7
78 <151> PRIOR FILING DATE: 1999-08-31
80 <150> PRIOR APPLICATION NUMBER: DE 19942087.4
81 <151> PRIOR FILING DATE: 1999-09-03
83 <160> NUMBER OF SEQ ID NOS: 480

These data are repeated. Delete duplicate.

ERRORED SEQUENCES

10974 <210> SEQ ID NO: 114
10975 <211> LENGTH: 1106
10976 <212> TYPE: PRT
10977 <213> ORGANISM: Corynebacterium glutamicum
10979 <400> SEQUENCE: 114
10980 Met Phe Ala Pro Pro Glu Gly Asp Asp Thr Asp Glu Val Arg Arg Thr
10981 1 5 10 15
10983 Tyr Leu Arg His Leu Gly Ala Leu Arg Ala Lys Ala Thr Asp His Ala
10984 20 25 30
10986 Ala Met Gln Arg Arg His Glu Trp His Arg His Pro Asp Pro Ala Thr
10987 35 40 45
10989 Leu Trp Ser Thr Leu Gly Thr Arg Arg Met Trp Glu Arg Thr Gln Asp
10990 50 55 60
10992 Asp Gln Asp Cys Leu Glu Ile Arg Phe Gly Leu Gly Val Thr Arg Leu
10993 65 70 75 80
10995 Asp Pro Ala Ile Asn Val Ser Asp Ser Gly Ala Pro Glu Asp Leu Asp
10996 85 90 95
10998 Pro Val Cys Ala Val Ser Leu Arg His Thr Ile Arg Asp Val Gly Ser
10999 100 105 110
11001 Val Gln Ser Met Pro Val Ser Val Gln Leu Gln Ala Phe Arg Phe Ile
11002 115 120 125
11004 Gly Leu Asn Gly Ala Gly Ala His Asp Leu Ala Arg Ala Leu Val Val
11005 130 135 140
11007 Gln Leu Leu Tyr His His Gly Pro Glu Val Val Gly Ile Lys Ala Ile
11008 145 150 155 160
11010 Gly Glu Ser Gly Trp Glu Trp Leu Lys Trp Val Pro His Thr Arg Asp
11011 165 170 175
11013 Pro Glu Lys Ala Ala Phe Arg Ile Leu Leu Val Asp Ser Val Leu Thr
11014 180 185 190
11016 Asn Gly Thr Glu Ser Phe Ile Asp Asp Pro Gln Trp Thr Thr Ile Ile
11017 195 200 205
11019 Asn Val Gly Ala Gln Thr Ser Thr Ala Leu Gly Gln Leu Ala Glu Asp
11020 210 215 220
11022 Glu Gly Leu Leu Leu His Val Asp Lys Arg Leu His Val Ala Thr Ala
11023 225 230 235 240
11025 His Gly Ala Glu Glu Leu Gly Thr Pro Asp Ala Val Ser Ala Glu Leu
11026 245 250 255

see pp 4-5

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11028 Ala Glu Val Phe Gly Arg Arg Leu Thr Ala Phe Arg Arg Thr Thr Thr
11029           260           265           270
11031 Ala His Ala Ala Ser Ser Gly Glu Leu Leu Ser Leu Leu Gly Ile Asp
11032           275           280           285
11034 Asp Val Glu His Leu Thr Pro Glu Thr Leu Trp Met Asn Lys Arg Thr
11035           290           295           300
11037 Gln Pro Lys Thr Arg Leu Ala Val Pro Leu Gly Leu Asn Ala Ser Gly
11038 305           310           315           320
11040 Arg Pro Met Val Leu Asp Leu Lys Glu Ser Ala His Gly Gly Met Gly
11041           325           330           335
11043 Pro His Gly Leu Cys Ile Gly Ala Thr Gly Ser Gly Lys Ser Glu Leu
11044           340           345           350
11046 Leu Arg Thr Leu Val Leu Gly Leu Thr Ile Thr His Ser Pro Glu Glu
11047           355           360           365
11049 Leu Asn Leu Val Leu Val Asp Phe Lys Gly Gly Ala Thr Phe Leu Gly
11050           370           375           380
11052 Phe Glu Gln Leu Pro His Thr Ser Ala Val Ile Thr Asn Leu Glu Glu
11053 385           390           395           400
11055 Glu Pro Val Leu Val Glu Arg Met His Asp Ala Ile Ser Gly Glu Met
11056           405           410           415
11058 Asn Arg Arg Gln Glu Ala Leu Arg Gln Ala Gly Gly Cys Ala Asn Val
11059           420           425           430
11061 Asp Glu Tyr Asn Gln Arg Asp Gly Val Lys Pro Met Pro Ala Leu Leu
11062           435           440           445
11064 Ile Glu Ser Asp Glu Phe Ser Glu Leu Leu Gly Gln His Pro Asp Phe
11065           450           455           460
11067 Ala Asp Leu Phe Val Ala Val Gly Arg Leu Gly Arg Ser Leu His Ile
11068 465           470           475           480
11070 His Leu Leu Leu Ala Ser Gln Arg Leu Glu Gly Arg Leu Arg Gly
11071           485           490           495
11073 Leu Asp Ser His Leu Ser Tyr Arg Ile Gly Leu Lys Thr Phe Ser Ala
11074           500           505           510
11076 Ser Glu Ser Arg Gln Val Leu Gly Ile Thr Asp Ala Tyr Gln Leu Pro
11077           515           520           525
11079 Ser Gln Pro Gly Ala Gly Phe Leu Lys Ser Asp Val Asp Thr Val Thr
11080           530           535           540
11082 Arg Phe Gln Ala Ser Tyr Val Ser Gly Pro Ile Met Arg Arg His His
11083 545           550           555           560
11085 Leu Ala Pro Thr Gln Ser Arg Val Arg Leu Phe Thr Ser Trp Glu Glu
11086           565           570           575
11088 Pro Lys Glu Glu Val Ile Val Glu Gln Ser Thr Glu Thr Leu Ile Asp
11089           580           585           590
11091 Ala Val Val Ala Arg Ala Ile Ser Ala Ala Lys Leu Arg Gly Leu Ser
11092           595           600           605
11094 Ala His Arg Ile Trp Leu Pro Pro Leu Pro Ala Glu Val Ser Ile Gly
11095           610           615           620
11097 Ala Leu Ala Asp Asp Val Gly Glu Leu Ser Ala Val Ile Gly Met Ile
11098 625           630           635           640
11100 Asp Arg Pro Tyr Gln Gln Arg Gln Asp Pro Leu Leu Ile Asp Phe Ser

```

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11101          645          650          655
11103 Leu Thr Gly Gly Ser Gly His Trp Ala Ile Cys Gly Gly Pro Gln Thr
11104          660          665          670
11106 Gly Lys Ser Thr Ala Leu Arg Ser Ile Val Ile Ser Met Ala Ala Thr
11107          675          680          685
11109 His Ser Thr Glu Asn Ile Arg Phe Tyr Val Leu Asp Leu Ser Gly Thr
11110          690          695          700
11112 Ser Leu Glu Asn Leu Ser Arg Leu Pro His Val Ala Gly Val Ala Gly
11113 705          710          715          720
11115 Arg Lys Asp Pro Glu Lys Val Arg Arg Val Val Asp Glu Val Arg Gly
11116          725          730          735
11118 Leu Ile Asn His Pro Glu Gln Arg His Thr Phe Leu Ile Val Asp Gly
11119          740          745          750
11121 Trp His Thr Ile Thr Gln Glu Phe Asp Glu Leu Phe Asp Ala Phe Val
11122          755          760          765
11124 Asp Ile Ala Ala Asn Gly Leu Ala Ser Arg Val His Leu Val Leu Ser
11125          770          775          780
11127 Thr Gln Arg Trp Ser Ser Ile Arg Pro Ala Val Arg Asp Leu Val Thr
11128 785          790          795          800
11130 Gly Arg Ile Glu Leu Lys Leu Gly Glu Ala Met Asp Ser Val Ile Asp
11131          805          810          815
11133 Arg Lys Ala Gln Leu Arg Ile Pro Ser Lys Pro Gly Arg Gly Leu Asn
11134          820          825          830
11136 Leu Asp Lys Glu His Ile Leu Ile Ala His Ala Ser Gly Gln Asp Ile
11137          835          840          845
11139 Ala Gln Val Cys Val Met Ala Asp Gly Gln Gly Trp Gln Gln Val Pro
11140          850          855          860
11142 Gln Leu Ser Val Leu Pro Ala His Ile Leu Leu His Glu Leu Glu Leu
11143 865          870          875          880
11145 Ser Ala Thr Pro Gly Ile Pro Ile Ala Arg Gly Gly Ala Glu Leu Ser
11146          885          890          895
11148 Thr Leu Thr Trp Asp Pro Glu Ser Ser Arg His Leu Leu Ala Phe Gly
11149          900          905          910
11151 Ser Gln Gly Cys Gly Lys Ser Ser Leu Ile Arg Thr Ile Val Thr Gly
11152          915          920          925
11154 Leu Thr Ile Val Gly Arg Glu Lys Ala Arg Leu Val Phe Phe Asp Leu
11155          930          935          940
11157 Arg Arg Thr His Leu Gly Leu Val Pro Glu Asp Met Leu Ala Ala Tyr
11158 945          950          955          960
11160 Cys Ala Thr Ser Thr Ala Val His Asn Thr Ile Lys Asp Met Val Ala
11161          965          970          975
11163 Thr Leu Ser Ala Arg Leu Pro Gly Pro Asp Ile Thr Ala Gln Glu Leu
11164          980          985          990
11166 Arg Asp Arg Ser Trp Trp Gln Gly Pro Asp Ile Tyr Leu Val Ile Asp
E--> 11167          995          1000          1005
11169 Asp Tyr Asp Leu Leu Pro Ala Gly Thr Leu His Pro Leu Arg Glu Ile
E--> 11170          1010          1015          1020
11172 Ile Pro His Ala Arg Asp Val Gly Leu His Ile Val Leu Thr Arg Lys
E--> 11173 1025          1030          1035          1040

```

move this directly
under "L" in Leu
Leu
1005, AND

(do not extend numbers
into next amino acid)

leave a space
between last
number and next
amino acid

e.g. Leu
1005/sp/Val

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11175 Ala Gly Gly Ala Ser Arg Ala Leu Tyr Asp Pro Val Met Ser Glu Ile
 E--> 11176 1045 ←1050 ←1055
 11178 Lys Asp Gln Ser Pro His Val Val Leu Phe Asp Ala Asp Arg Asp Glu
 E--> 11179 1060 ←1065 ←1070
 11181 Gly Ala Ile Leu Gly Ile Lys Pro Thr Ala Gln Pro Pro Gly Arg Ala
 E--> 11182 1075 ←1080 ←1085
 11184 Thr Met Ser Ile Arg Gly Glu Asn Ile Gly Val Ala Gln Met Ala Pro
 E--> 11185 1090 ←1095 ←1100
 11187 His Arg
 11188 1105
 22021 <210> SEQ ID NO: 226
 22022 <211> LENGTH: 1274
 22023 <212> TYPE: PRT
 22024 <213> ORGANISM: Corynebacterium glutamicum
 22026 <400> SEQUENCE: 226
 22027 Leu Trp Asp Val Leu Glu Ser Val Ala Ser Thr Tyr Pro Glu Ala Ala
 22028 1 5 10 15
 22030 Ala Ile Asp Asp Gly Gln Val Leu Thr Tyr Ala Glu Leu Met Glu Glu
 22031 20 25 30
 22033 Val Thr Ala Leu Ala Asp Ser Ile His Ala Gln Gly Ile Arg Arg Gly
 22034 35 40 45
 22036 Asp Arg Ile Gly Ile Arg Met Pro Ser Gly Thr Arg Asp Leu Tyr Ile
 22037 50 55 60
 22039 Ala Ile Leu Ala Thr Leu Ala Ala Gly Ala Ala Tyr Val Pro Val Asp
 22040 65 70 75 80
 22042 Ala Asp Asp Pro Glu Glu Arg Ala Glu Met Val Phe Gly Glu Ala Asn
 22043 85 90 95
 22045 Ile Asn Ala Leu Phe Asp Ala Thr Gly Phe His Met Leu Arg Pro Thr
 22046 100 105 110
 22048 Ala Gly Gly Asp Thr Arg Arg Pro Arg Leu Asp Asp Thr Ala Trp Ile
 22049 115 120 125
 22051 Ile Phe Thr Ser Gly Ser Thr Gly Lys Pro Lys Gly Val Ala Val Ser
 22052 130 135 140
 22054 His Arg Ser Ala Ala Ala Phe Val Asp Ala Glu Ala Gln Met Phe Leu
 22055 145 150 155 160
 22057 Val Asp His Pro Ser Gly Pro Leu Gly Pro Glu Asp Arg Val Leu Ala
 22058 165 170 175
 22060 Gly Leu Ser Val Ala Phe Asp Ala Ser Cys Glu Glu Met Trp Leu Ala
 22061 180 185 190
 22063 Trp Gly His Gly Ala Cys Leu Val Pro Ala Pro Arg Ser Leu Val Arg
 22064 195 200 205
 22066 Ser Gly Met Asp Leu Gly Pro Trp Leu Ile Arg Arg Asp Ile Ser Val
 22067 210 215 220
 22069 Val Ser Thr Val Pro Thr Leu Ala Gly Leu Trp Pro Ala Glu Ala Leu
 22070 225 230 235 240
 22072 Ser Gln Val Arg Leu Leu Ile Val Gly Gly Glu Ala Cys Ser Gln Glu
 22073 245 250 255
 22075 Leu Val Glu Arg Leu Ser Thr Pro Asp Arg Glu Val Trp Asn Thr Tyr
 22076 260 265 270

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Output Set: N:\CRF3\02162001\I603124A.raw

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22078 Gly Pro Thr Glu Ala Thr Val Val Ala Cys Gly Thr Gln Leu Tyr Ala
22079          275          280          285
22081 Gly Gln Pro Val Gly Ile Gly Leu Pro Leu Ala Gly Trp Asp Leu Val
22082          290          295          300
22084 Val Val Asp Asp Ala Gly Glu Pro Val Gly Ile Gly Glu Val Gly Glu
22085 305          310          315          320
22087 Leu Val Ile Gly Gly Val Gly Leu Ala Arg Tyr Leu Asp Pro Glu Lys
22088          325          330          335
22090 Asp Arg Glu Lys Tyr Ala Pro Leu Lys Ser Val Gly Trp Thr Arg Ala
22091          340          345          350
22093 Tyr Arg Ser Gly Asp His Val Arg Leu Glu Glu Asp Gly Leu Tyr Phe
22094          355          360          365
22096 Val Gly Arg Val Asp Asp Gln Val Lys Ile Gly Gly Arg Arg Ile Glu
22097          370          375          380
22099 Leu Gly Glu Val Asp Ala Asn Val Ala Ala Leu Ser Asn Val Arg Ser
22100 385          390          395          400
22102 Ser Ala Val Val Val Gln Thr Thr Gly Ala Asp Gln Lys Val Leu Val
22103          405          410          415
22105 Ala Tyr Val Ser Leu Glu Asp Ala Ala Ala Gly Phe Asp His Asn Val
22106          420          425          430
22108 Ala Thr Ala Arg Leu Thr Glu Thr Met Pro Ala Ala Leu Val Pro Arg
22109          435          440          445
22111 Ile His Val Met Asp Asp Leu Pro Val Thr Thr Ser Gly Lys Val Asp
22112          450          455          460
22114 Lys Lys Ser Leu Pro Trp Pro Leu Pro Gly Thr Val Val Glu Ala Asn
22115 465          470          475          480
22117 Asp Leu Ser Ala Thr Glu Ala Trp Ile Ala Gln Glu Trp Val Asp Ile
22118          485          490          495
22120 Leu Gly Thr Ser Val Ser Ser Lys Asp Ala Asp Phe Phe Ser Leu Gly
22121          500          505          510
22123 Gly Thr Ser Leu Ala Ala Ala Thr Leu Val Gly Arg Val Arg Ala Lys
22124          515          520          525
22126 Val Pro Thr Ala Ala Val Arg Asp Leu Tyr Asp His Pro Arg Leu Glu
22127          530          535          540
22129 Lys Phe Ala Glu Arg Val Glu Ala Ile Ala Ala Asp Thr Gly Ile Ser
22130 545          550          555          560
22132 Leu Glu Ala Pro Asn Gln Val Glu Glu Arg Val Val Lys Pro Val Ser
22133          565          570          575
22135 Phe Gly Thr Arg Val Met Gln Thr Leu Ile Gln Ile Pro Ile Met Thr
22136          580          585          590
22138 Leu Gln Ala Ala Gln Trp Ile Ala Trp Leu Leu Leu Gly Asn Asn Ile
22139          595          600          605
22141 Met Ala Ala Leu Asp Phe Asp Trp Ala Val His Val Ser Trp Trp Leu
22142          610          615          620
22144 Val Ile Gly Met Ile Leu Val Phe Ala Thr Pro Ile Gly Arg Leu Pro
22145 625          630          635          640
22147 Ile Gly Gly Trp Gly Ala Arg Ile Ile Thr Arg Gly Ile Thr Pro Gly
22148          645          650          655
22150 Ser Tyr Pro Arg Gly Gly Ser Thr His Leu Arg Ile Trp Ser Ala Glu

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22151	660	665	670
22153	Arg Leu Ala Asp Ala Ser Gly	Ser Arg Asn Ile Ser Gly	Ala Thr Trp
22154	675	680	685
22156	Val Asn Tyr Phe Ala Arg Ser	Leu Gly Val Lys Met Gly	Lys Gly Val
22157	690	695	700
22159	Asp Leu His Ser Leu Pro Pro	Ile Thr Gly Leu Leu Thr Leu	Gly Asn
22160	705	710	715
22162	Asn Val Ser Ile Glu Gln Glu	Val Asp Leu Arg Gly Tyr Trp	Leu Asp
22163	725	730	735
22165	Gly Asp Ile Leu Arg Val Gly	Thr Ile Glu Val His Asp Asn	Ala Arg
22166	740	745	750
22168	Ile Gly Ala Arg Ser Thr Leu	Leu Pro Gly Thr Val Val Gly	Thr Gly
22169	755	760	765
22171	Ala His Leu Leu Pro Gly Ser	Thr Val Thr Gly Asp Lys Thr	Ile Lys
22172	770	775	780
22174	Pro Gly Ser Arg Trp Ala Gly	Ser Pro Ala Gln Lys Val Gly	Arg Ala
22175	785	790	795
22177	Lys His Arg Phe Pro Thr Ser	His Pro Pro Arg Arg Ser Arg	Trp Val
22178	805	810	815
22180	Pro Val Phe Gly Ala Thr Ser	Ile Val Leu Ser Leu Leu Pro	Leu Gln
22181	820	825	830
22183	Ala Leu Ala Ile Gly Ala Ala	Ile Thr Leu Trp Leu Ala Thr	Ile Ser
22184	835	840	845
22186	Pro Leu Pro Leu Ile Trp Gly	Val Leu Val Phe Ala Thr Val	Gly Ala
22187	850	855	860
22189	Leu Ala Ala Phe Phe Ala Tyr	Thr Val Thr Ile Trp Val Leu	Val Arg
22190	865	870	875
22192	Leu Ile Gln Ile Gly Ile Lys	Gly Gly Thr Ala Pro Val Arg	Ser Arg
22193	885	890	895
22195	Leu Gly Trp Gln Val Trp Ala	Val Gln Arg Leu Met Asp Asp	Ala Arg
22196	900	905	910
22198	Thr Tyr Leu Phe Pro Leu Tyr	Ala Ser Gln Leu Thr Pro Leu	Trp Phe
22199	915	920	925
22201	Arg Ser Leu Gly Ala Lys Ile	Gly Lys Asp Val Glu Ile Ser	Thr Ala
22202	930	935	940
22204	Val Met Val Pro Lys Leu Ala	Asp Ile Arg Glu Gly Ala Phe	Leu Ala
22205	945	950	955
22207	Asp Asp Thr Leu Ile Gly Gly	Tyr Glu Leu Gly Asn Gly Trp	Leu Leu
22208	965	970	975
22210	Ser Gly Glu Thr Arg Val Gly	Lys Arg Ser Phe Ile Gly Asn	Ser Gly
22211	980	985	990
22213	Ile Ala Gly Pro Glu Arg Lys	Leu Ala Lys Asn Ser Leu Val	Ala Val
E--> 22214	995	1000	←1005
22216	Leu Ser Ser Thr Pro Lys Lys	Ala Lys Ala Asn Ser Asn Trp	Trp Gly
E--> 22217	1010	←1015	←1020
22219	Ser Pro Pro Glu Arg Met Arg	Arg Val Thr Val Glu Val Asp	Glu Gly
E--> 22220	1025	←1030	←1035 1040 1040
22222	Glu Ala Lys Thr Tyr Ser Pro	Gly Phe Gly Val Lys Phe Ala	Arg Gly
E--> 22223	1045	←1050	←1055

*same
err*

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22225 Ala Val Glu Thr Ala Arg Leu Leu Ala Pro Ile Thr Ser Gly Val Leu
E--> 22226          1060          <1065          <1070
22228 Ala Ala Leu Ser Leu Leu Leu Met Gln Tyr Leu Leu Thr Glu Phe Asn
E--> 22229          1075          <1080          <1085
22231 Met Trp Ile Thr Trp Leu Leu Gly Gly Leu Ile Leu Met Thr Val Gly
E--> 22232          1090          <1095          <1100
22234 Val Leu Ala Met Gly Ile Thr Val Val Met Lys Trp Val Cys Val Gly
E--> 22235 1105          <1110          <1115          1120 1120
22237 Lys His Lys Pro Ser Glu His Pro Leu Phe Ser Arg Phe Val Trp Leu
E--> 22238          1125          1130          1135
22240 Asn Glu Leu Gln Asp Ala Phe Val Glu Ser Val Ala Gly Pro Trp Phe
E--> 22241          1140          1145          1150
22243 Leu Val Pro Asn Leu Gly Thr Gly Ala Leu Asn Ala Gly Met Ser Ala
E--> 22244          1155          1160          1165
22246 Leu Gly Ala His Ile Gly Arg Gly Ala Trp Ile Glu Ser Tyr Trp Leu
E--> 22247          1170          1175          1180
22249 Pro Glu Thr Asp Leu Cys Tyr Ile Gly Lys Gly Ala Thr Val Gly Pro
E--> 22250 1185          1190          1195          1200
22252 Gly Val Val Val Gln Thr His Leu Phe Gln Asp Arg Val Met Ser Leu
E--> 22253          1205          1210          1215
22255 Asp Thr Val Thr Val Ala Asp Gly Ala Thr Leu Ala Asp His Ser Val
E--> 22256          1220          1225          1230
22258 Ala Leu Pro Ala Ser Leu Ile Asp Ala Ser Ala Thr Ile Gly Pro Gly
E--> 22259          1235          1240          1245
22261 Ser Leu Val Met Arg Gly Asp Lys Val Pro Ala His Thr Arg Trp Gln
E--> 22262          1250          1255          1260
22264 Gly Asn Pro Ile Glu Pro Trp Ser Asn Ser
22265 1265          1270
22606 <210> SEQ ID NO: 228
22607 <211> LENGTH: 1274
22608 <212> TYPE: PRT
22609 <213> ORGANISM: Corynebacterium glutamicum
22611 <400> SEQUENCE: 228
22612 Leu Trp Asp Val Leu Glu Ser Val Ala Ser Thr Tyr Pro Glu Ala Ala
22613 1 5 10 15
22615 Ala Ile Asp Asp Gly Gln Val Leu Thr Tyr Ala Glu Leu Met Glu Glu
22616 20 25 30
22618 Val Thr Ala Leu Ala Asp Ser Ile His Ala Gln Gly Ile Arg Arg Gly
22619 35 40 45
22621 Asp Arg Ile Gly Ile Arg Met Pro Ser Gly Thr Arg Asp Leu Tyr Ile
22622 50 55 60
22624 Ala Ile Leu Ala Thr Leu Ala Ala Gly Ala Ala Tyr Val Pro Val Asp
22625 65 70 75 80
22627 Ala Asp Asp Pro Glu Glu Arg Ala Glu Met Val Phe Gly Glu Ala Asn
22628 85 90 95
22630 Ile Asn Ala Leu Phe Asp Ala Thr Gly Phe His Met Leu Arg Pro Thr
22631 100 105 110
22633 Ala Gly Gly Asp Thr Arg Arg Pro Arg Leu Asp Asp Thr Ala Trp Ile
22634 115 120 125

```

*please edit
 per
 instructions
 on p. 4*

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Input Set : N:\jumbos\seqlistcorrected.txt

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```

22636 Ile Phe Thr Ser Gly Ser Thr Gly Lys Pro Lys Gly Val Ala Val Ser
22637      130      135      140
22639 His Arg Ser Ala Ala Ala Phe Val Asp Ala Glu Ala Gln Met Phe Leu
22640 145      150      155      160
22642 Val Asp His Pro Ser Gly Pro Leu Gly Pro Glu Asp Arg Val Leu Ala
22643      165      170      175
22645 Gly Leu Ser Val Ala Phe Asp Ala Ser Cys Glu Glu Met Trp Leu Ala
22646      180      185      190
22648 Trp Gly His Gly Ala Cys Leu Val Pro Ala Pro Arg Ser Leu Val Arg
22649      195      200      205
22651 Ser Gly Met Asp Leu Gly Pro Trp Leu Ile Arg Arg Asp Ile Ser Val
22652      210      215      220
22654 Val Ser Thr Val Pro Thr Leu Ala Gly Leu Trp Pro Ala Glu Ala Leu
22655 225      230      235      240
22657 Ser Gln Val Arg Leu Leu Ile Val Gly Gly Glu Ala Cys Ser Gln Glu
22658      245      250      255
22660 Leu Val Glu Arg Leu Ser Thr Pro Asp Arg Glu Val Trp Asn Thr Tyr
22661      260      265      270
22663 Gly Pro Thr Glu Ala Thr Val Val Ala Cys Gly Thr Gln Leu Tyr Ala
22664      275      280      285
22666 Gly Gln Pro Val Gly Ile Gly Leu Pro Leu Ala Gly Trp Asp Leu Val
22667      290      295      300
22669 Val Val Asp Asp Ala Gly Glu Pro Val Gly Ile Gly Glu Val Gly Glu
22670 305      310      315      320
22672 Leu Val Ile Gly Gly Val Gly Leu Ala Arg Tyr Leu Asp Pro Glu Lys
22673      325      330      335
22675 Asp Arg Glu Lys Tyr Ala Pro Leu Lys Ser Val Gly Trp Thr Arg Ala
22676      340      345      350
22678 Tyr Arg Ser Gly Asp His Val Arg Leu Glu Glu Asp Gly Leu Tyr Phe
22679      355      360      365
22681 Val Gly Arg Val Asp Asp Gln Val Lys Ile Gly Gly Arg Arg Ile Glu
22682      370      375      380
22684 Leu Gly Glu Val Asp Ala Asn Val Ala Ala Leu Ser Asn Val Arg Ser
22685 385      390      395      400
22687 Ser Ala Val Val Val Gln Thr Thr Gly Ala Asp Gln Lys Val Leu Val
22688      405      410      415
22690 Ala Tyr Val Ser Leu Glu Asp Ala Ala Ala Gly Phe Asp His Asn Val
22691      420      425      430
22693 Ala Thr Ala Arg Leu Thr Glu Thr Met Pro Ala Ala Leu Val Pro Arg
22694      435      440      445
22696 Ile His Val Met Asp Asp Leu Pro Val Thr Thr Ser Gly Lys Val Asp
22697      450      455      460
22699 Lys Lys Ser Leu Pro Trp Pro Leu Pro Gly Thr Val Val Glu Ala Asn
22700 465      470      475      480
22702 Asp Leu Ser Ala Thr Glu Ala Trp Ile Ala Gln Glu Trp Val Asp Ile
22703      485      490      495
22705 Leu Gly Thr Ser Val Ser Ser Lys Asp Ala Asp Phe Phe Ser Leu Gly
22706      500      505      510
22708 Gly Thr Ser Leu Ala Ala Ala Thr Leu Val Gly Arg Val Arg Ala Lys

```

RAW SEQUENCE LISTING
 PATENT APPLICATION: US/09/603,124A

DATE: 02/16/2001

TIME: 08:35:31

Input Set : N:\jumbos\seqlistcorrected.txt

Output Set: N:\CRF3\02162001\I603124A.raw

```

22709          515          520          525
22711 Val Pro Thr Ala Ala Val Arg Asp Leu Tyr Asp His Pro Arg Leu Glu
22712          530          535          540
22714 Lys Phe Ala Glu Arg Val Glu Ala Ile Ala Ala Asp Thr Gly Ile Ser
22715 545          550          555          560
22717 Leu Glu Ala Pro Asn Gln Val Glu Glu Arg Val Val Lys Pro Val Ser
22718          565          570          575
22720 Phe Gly Thr Arg Val Met Gln Thr Leu Ile Gln Ile Pro Ile Met Thr
22721          580          585          590
22723 Leu Gln Ala Ala Gln Trp Ile Ala Trp Leu Leu Leu Gly Asn Asn Ile
22724          595          600          605
22726 Met Ala Ala Leu Asp Phe Asp Trp Ala Val His Val Ser Trp Trp Leu
22727          610          615          620
22729 Val Ile Gly Met Ile Leu Val Phe Ala Thr Pro Ile Gly Arg Leu Pro
22730 625          630          635          640
22732 Ile Gly Gly Trp Gly Ala Arg Ile Ile Thr Arg Gly Ile Thr Pro Gly
22733          645          650          655
22735 Ser Tyr Pro Arg Gly Gly Ser Thr His Leu Arg Ile Trp Ser Ala Glu
22736          660          665          670
22738 Arg Leu Ala Asp Ala Ser Gly Ser Arg Asn Ile Ser Gly Ala Thr Trp
22739          675          680          685
22741 Val Asn Tyr Phe Ala Arg Ser Leu Gly Val Lys Met Gly Lys Gly Val
22742          690          695          700
22744 Asp Leu His Ser Leu Pro Pro Ile Thr Gly Leu Leu Thr Leu Gly Asn
22745 705          710          715          720
22747 Asn Val Ser Ile Glu Gln Glu Val Asp Leu Arg Gly Tyr Trp Leu Asp
22748          725          730          735
22750 Gly Asp Ile Leu Arg Val Gly Thr Ile Glu Val His Asp Asn Ala Arg
22751          740          745          750
22753 Ile Gly Ala Arg Ser Thr Leu Leu Pro Gly Thr Val Val Gly Thr Gly
22754          755          760          765
22756 Ala His Leu Leu Pro Gly Ser Thr Val Thr Gly Asp Lys Thr Ile Lys
22757          770          775          780
22759 Pro Gly Ser Arg Trp Ala Gly Ser Pro Ala Gln Lys Val Gly Arg Ala
22760 785          790          795          800
22762 Lys His Arg Phe Pro Thr Ser His Pro Pro Arg Arg Ser Arg Trp Val
22763          805          810          815
22765 Pro Val Phe Gly Ala Thr Ser Ile Val Leu Ser Leu Leu Pro Leu Gln
22766          820          825          830
22768 Ala Leu Ala Ile Gly Ala Ala Ile Thr Leu Trp Leu Ala Thr Ile Ser
22769          835          840          845
22771 Pro Leu Pro Leu Ile Trp Gly Val Leu Val Phe Ala Thr Val Gly Ala
22772          850          855          860
22774 Leu Ala Ala Phe Phe Ala Tyr Thr Val Thr Ile Trp Val Leu Val Arg
22775 865          870          875          880
22777 Leu Ile Gln Ile Gly Ile Lys Gly Gly Thr Ala Pro Val Arg Ser Arg
22778          885          890          895
22780 Leu Gly Trp Gln Val Trp Ala Val Gln Arg Leu Met Asp Asp Ala Arg
22781          900          905          910

```

RAW SEQUENCE LISTING

DATE: 02/16/2001

PATENT APPLICATION: US/09/603,124A

TIME: 08:35:31

Input Set : N:\jumbos\seqlistcorrected.txt

Output Set: N:\CRF3\02162001\I603124A.raw

```

22783 Thr Tyr Leu Phe Pro Leu Tyr Ala Ser Gln Leu Thr Pro Leu Trp Phe
22784          915          920          925
22786 Arg Ser Leu Gly Ala Lys Ile Gly Lys Asp Val Glu Ile Ser Thr Ala
22787          930          935          940
22789 Val Met Val Pro Lys Leu Ala Asp Ile Arg Glu Gly Ala Phe Leu Ala
22790 945          950          955          960
22792 Asp Asp Thr Leu Ile Gly Gly Tyr Glu Leu Gly Asn Gly Trp Leu Leu
22793          965          970          975
22795 Ser Gly Glu Thr Arg Val Gly Lys Arg Ser Phe Ile Gly Asn Ser Gly
22796          980          985          990
22798 Ile Ala Gly Pro Glu Arg Lys Leu Ala Lys Asn Ser Leu Val Ala Val
E--> 22799          995          1000          1005
22801 Leu Ser Ser Thr Pro Lys Lys Ala Lys Ala Asn Ser Asn Trp Trp Gly
E--> 22802          1010          1015          1020
22804 Ser Pro Pro Glu Arg Met Arg Arg Val Thr Val Glu Val Asp Glu Gly
E--> 22805 1025          1030          1035          1040
22807 Glu Ala Lys Thr Tyr Ser Pro Gly Phe Gly Val Lys Phe Ala Arg Gly
E--> 22808          1045          1050          1055
22810 Ala Val Glu Thr Ala Arg Leu Leu Ala Pro Ile Thr Ser Gly Val Leu
E--> 22811          1060          1065          1070
22813 Ala Ala Leu Ser Leu Leu Leu Met Gln Tyr Leu Leu Thr Glu Phe Asn
E--> 22814          1075          1080          1085
22816 Met Trp Ile Thr Trp Leu Leu Gly Gly Leu Ile Leu Met Thr Val Gly
E--> 22817          1090          1095          1100
22819 Val Leu Ala Met Gly Ile Thr Val Val Met Lys Trp Val Cys Val Gly
E--> 22820 1105          1110          1115          1120
22822 Lys His Lys Pro Ser Glu His Pro Leu Phe Ser Arg Phe Val Trp Leu
E--> 22823          1125          1130          1135
22825 Asn Glu Leu Gln Asp Ala Phe Val Glu Ser Val Ala Gly Pro Trp Phe
E--> 22826          1140          1145          1150
22828 Leu Val Pro Asn Leu Gly Thr Gly Ala Leu Asn Ala Gly Met Ser Ala
E--> 22829          1155          1160          1165
22831 Leu Gly Ala His Ile Gly Arg Gly Ala Trp Ile Glu Ser Tyr Trp Leu
E--> 22832          1170          1175          1180
22834 Pro Glu Thr Asp Leu Cys Tyr Ile Gly Lys Gly Ala Thr Val Gly Pro
E--> 22835 1185          1190          1195          1200
22837 Gly Val Val Val Gln Thr His Leu Phe Gln Asp Arg Val Met Ser Leu
E--> 22838          1205          1210          1215
22840 Asp Thr Val Thr Val Ala Asp Gly Ala Thr Leu Ala Asp His Ser Val
E--> 22841          1220          1225          1230
22843 Ala Leu Pro Ala Ser Leu Ile Asp Ala Ser Ala Thr Ile Gly Pro Gly
E--> 22844          1235          1240          1245
22846 Ser Leu Val Met Arg Gly Asp Lys Val Pro Ala His Thr Arg Trp Gln
E--> 22847          1250          1255          1260
22849 Gly Asn Pro Ile Glu Pro Trp Ser Asn Ser
22850 1265          1270
41270 <210> SEQ ID NO: 480
41271 <211> LENGTH: 17
41272 <212> TYPE: DNA

```

*same
error*

next page

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/603,124A

DATE: 02/16/2001
TIME: 08:35:34

Input Set : N:\jumbos\seqlistcorrected.txt
Output Set: N:\CRF3\02162001\I603124A.raw

41273 <213> ORGANISM: Artificial Sequence

41275 <220> FEATURE:

41276 <223> OTHER INFORMATION: Description of Artificial Sequence: primer

41278 <400> SEQUENCE: 480

E--> 41279 gtaaaacgac ggccagt

18 17

VERIFICATION SUMMARY

DATE: 02/16/2001

PATENT APPLICATION: US/09/603,124A

TIME: 08:35:35

Input Set : N:\jumbos\seqlistcorrected.txt

Output Set: N:\CRF3\02162001\I603124A.raw

L:74 M:288 W: Application Number is Repeated, <150> PRIOR APPLICATION NUMBER
L:10945 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:113
L:10949 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:113
L:10953 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:113
L:10957 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:113
L:10961 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:113
L:10965 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:113
L:10969 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:113
L:11167 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:114
M:332 Repeated in SeqNo=114
L:21950 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:225
L:21954 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:225
L:21958 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:225
L:21962 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:225
L:21966 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:225
L:21970 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:225
L:21974 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:225
L:21978 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:225
L:21982 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:225
L:21986 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:225
L:21990 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:225
L:21994 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:225
L:21998 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:225
L:22002 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:225
L:22006 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:225
L:22010 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:225
L:22014 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:225
L:22214 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:226
M:332 Repeated in SeqNo=226
L:22535 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:227
L:22539 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:227
L:22543 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:227
L:22547 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:227
L:22551 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:227
L:22555 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:227
L:22559 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:227
L:22563 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:227
L:22567 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:227
L:22571 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:227
L:22575 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:227
L:22579 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:227
L:22583 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:227
L:22587 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:227
L:22591 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:227
L:22595 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:227
L:22599 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:227
L:22799 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:228
M:332 Repeated in SeqNo=228

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/603,124A

DATE: 02/16/2001

TIME: 08:35:35

Input Set : N:\jumbos\seqlistcorrected.txt

Output Set: N:\CRF3\02162001\I603124A.raw

L:29130 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:315
L:34108 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:387
L:37083 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:425
L:37125 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:427
L:37127 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:427
L:41279 M:254 E: No. of Bases conflict, LENGTH:Input:18 Counted:17 SEQ:480